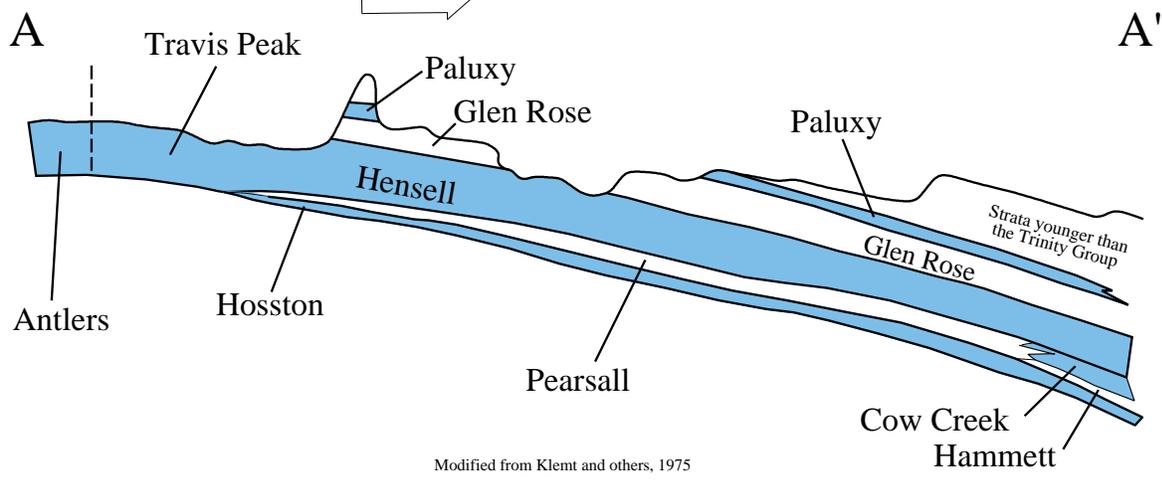
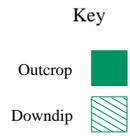
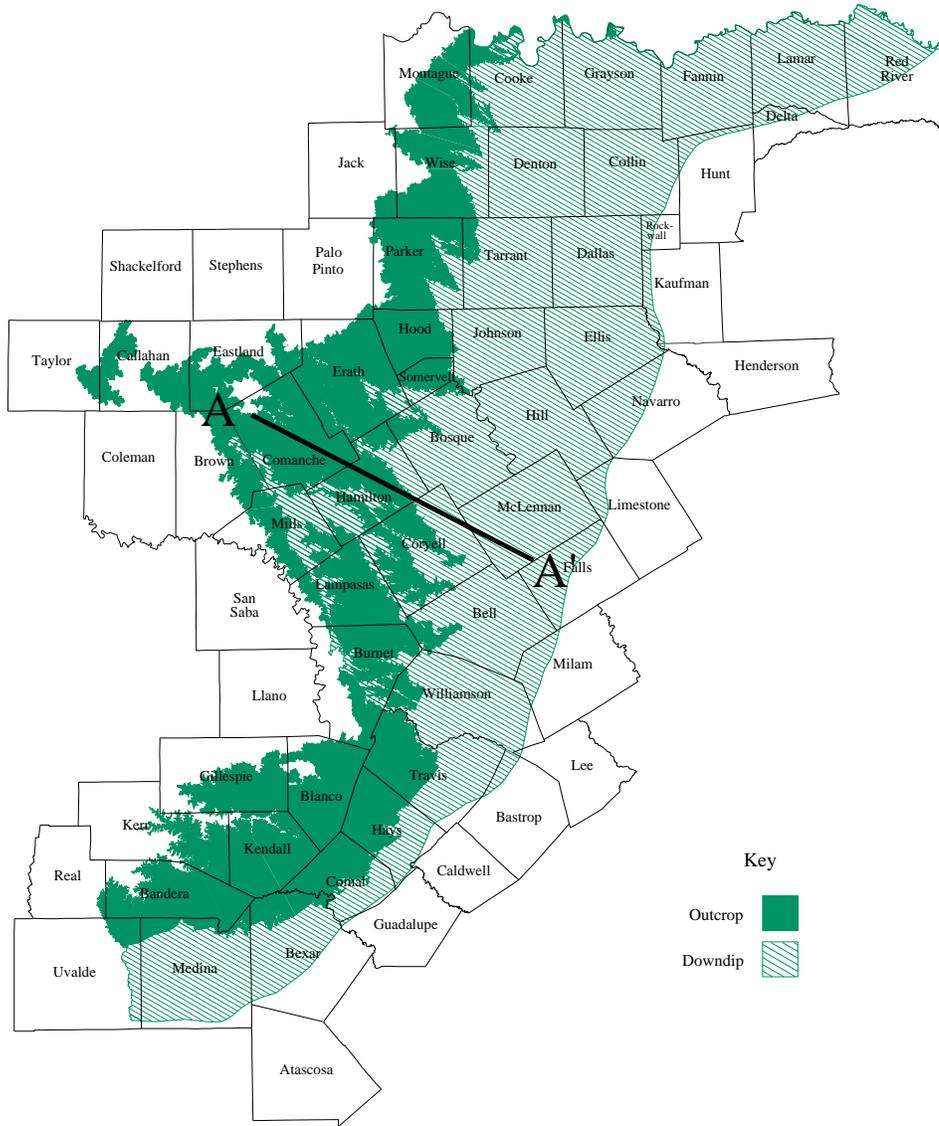


Trinity



Modified from Klemt and others, 1975

Trinity Aquifer

The Trinity aquifer consists of early Cretaceous age formations of the Trinity Group where they occur in a band extending through the central part of the state in all or parts of 55 counties, from the Red River in North Texas to the Hill Country of South-Central Texas. Trinity Group deposits also occur in the Panhandle and Edwards Plateau regions where they are included as part of the Edwards-Trinity (High Plains and Plateau) aquifers.

Formations comprising the Trinity Group are (from youngest to oldest) the Paluxy, Glen Rose, and Twin Mountains-Travis Peak. Updip, where the Glen Rose thins or is missing, the Paluxy and Twin Mountains coalesce to form the Antlers Formation. The Antlers consists of up to 900 feet of sand and gravel, with clay beds in the middle section. Water from the Antlers is mainly used for irrigation in the outcrop area of North and Central Texas.

Forming the upper unit of the Trinity Group, the Paluxy Formation consists of up to 400 feet of predominantly fine- to coarse-grained sand interbedded with clay and shale. The formation pinches out downdip and does not occur south of the Colorado River.

Underlying the Paluxy, the Glen Rose Formation forms a gulfward-thickening wedge of marine carbonates consisting primarily of limestone. South of the Colorado River, the Glen Rose is the upper unit of the Trinity Group and is divisible into an upper and lower member. In the north, the downdip portion of the aquifer becomes highly mineralized and is a source of contamination to wells that are drilled into the underlying Twin Mountains.

The basal unit of the Trinity Group consists of the Twin Mountains and Travis Peak formations, which are laterally separated by a facies change. To the north, the Twin Mountains Formation consists mainly of medium- to coarse-grained sands, silty clays, and conglomerates. The Twin Mountains is the most prolific of the Trinity aquifers in North-Central Texas; however, the quality of the water is generally not as good as that from the Paluxy or Antlers Formations. To the south, the Travis Peak Formation contains calcareous sands and silts, conglomerates, and limestones. The formation is subdivided into the following members in descending order: Hensell, Pearsall, Cow Creek, Hammett, Sligo, Hosston, and Sycamore.

Extensive development of the Trinity aquifer has occurred in the Fort Worth-Dallas region where water levels have historically dropped as much as 550 feet. Since the mid-1970s, many public supply wells have been abandoned in favor of a surface-water supply, and water levels have responded with slight rises. Water-level declines of as much as 100 feet are still occurring in Denton and Johnson counties. The Trinity aquifer is most extensively developed from the Hensell and Hosston members in the Waco area, where the water level has declined by as much as 400 feet.

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